

Amendments to the Drawings:

One new sheet of drawings is attached to this Reply to comply with the Examiner's requirement at paragraph 8 of the Office Action. The new sheet includes FIGS. 9 and 10. The specification as originally filed discloses fully the subject matter depicted in FIGS. 9 and 10, for example, at page 10, lines 6 – 18 and page 15, lines 12 – 18, respectively. No new subject matter has been added.

REMARKS

Applicants respectfully request reconsideration and allowance of the application.

I. CLAIMS STATUS

Claims 1 - 21 have been canceled without prejudice or disclaimer. New claims 22 - 41 have been added. After entry of the amendment, claims 22 - 41 remain pending. No new subject matter has been added. The pending claims are believed to be patentable over the cited references.

II. SPECIFICATION AMENDMENTS

Portions of the written specification have been amended to secure substantial consistency between the pending claims, the specification and the drawings. No new subject matter has been added.

III. RESTRICTION REQUIREMENT

Applicants affirm the election of Group I, claims 1 - 20.

IV. DOUBLE PATENTING

Claims 1 - 20 stand rejected on the grounds of non-statutory obviousness-type double patenting. Claims 1 - 20 have been canceled.

V. DRAWING OBJECTIONS

FIGS. 9 and 10 have been added to more fully comply with the requirements of 37 C.F.R. § 1.83(a). The specification has been correspondingly amended to reference FIGS. 9 and 10. No new subject matter has been added. The elements shown in FIGS. 9 and 10 are fully described in specification at page 10, lines 6 - 18 and page 15, lines 12 - 18, respectively, as originally filed.

VI. REJECTION UNDER 35 USC § 112

Claims 1 - 9 stand rejected under Section 112, second paragraph, as being

indefinite. These claims have been canceled. Applicants believe that currently pending claims 22 – 41 satisfy the requirements of Section 112, second paragraph.

VII. REJECTIONS UNDER 35 USC §§ 102 AND 103(a)

Claims 1 stands rejected under Section 102(b) and claims 1 - 21 stand rejected under Section 103(a). Although claims 1 – 21 have been canceled, for the record, Applicants respectfully traverse these rejections.

VIII. NEW CLAIMS 22 - 41

Claims 22 – 41 have been added to more particularly point out Applicant's invention. These claims are supported throughout the specification. No new subject matter has been added.

Claims 22 – 41 are patentable over the cited references for at least the following reasons.

Independent claims 22 and 33 recite:

“An electronic die, comprising:
a six-sided, cube-shaped shell defining the exterior of the electronic die, each side of the cube-shaped shell representing a predetermined outcome that is distinct from the outcomes represented by the other sides of the cube-shaped shell;
a first side of the cube-shaped shell representing the number one;
a second side of the cube-shaped shell representing the number two;
three light-emitting pips located on a third side of the cube-shaped shell, representing the number three;
four light-emitting pips located on a fourth side of the cube-shaped shell, representing the number four;
five light-emitting pips located on a fifth side of the cube-shaped shell, representing the number five;
six light-emitting pips located on a sixth side of the cube-shaped shell, representing the number six . . .”

Each side of the claimed die represents a specific, predetermined outcome that is distinct from the outcomes represented by other sides. This die configuration is entirely absent from the teachings of Larson (U.S. Patent 4,641,840), and thus, it is not anticipated by Larson.

Moreover, it would not be obvious to rely on the teachings of Larson to yield the die of claims 22 and 33 because modifying Larson in such a manner would destroy the intended purpose and change fundamentally the operational principles of Larson's die.

A proposed modification to a prior art device is not obvious if the modification makes the device inoperative for its intended purpose. See MPEP 2143.01. The intended purpose of Larson's die is to display simultaneously the same randomly-generated number on each side of the die, irrespective of which side faces up. See Larson Abstract, Summary of the Invention (col. 2, lines 55-58), col. 4, lines 27-30, etc. Indeed, Larson's die, as disclosed, is incapable of displaying anything but the same number on each side. Changing Larson's die so that each face displays a specific, predetermined number would make it inoperative to perform this essential function. Thus, Larson's teachings can not be relied upon to establish a finding of obviousness.

Furthermore, modifying Larson's die to determine outcomes based on die orientation would fundamentally change the principle of operation of Larson's invention. A proposed modification to a prior art device is not obvious if the modification changes the device's principle of operation. See MPEP 2143.01. The principle of operation of Larson's die is electronic random number generation. A digital circuit generates Larson's outcomes. See Larson, FIGS. 3a-b. Although Larson's die can be rolled to generate outcomes (it is motion activated), its outcomes do not depend on which side is up. Indeed, Larson's outcome is entirely independent of which side is up. This is because Larson uses an electronic circuit to randomly generate outcomes that are simultaneously displayed on all sides of the die. The outcomes do not depend on any particular side of the die, or which side is up when the die comes to rest. Modifying Larson's die to decide outcomes based on die orientation would alter drastically Larson's principle of operation. This in itself precludes using Larson's teachings to establish a finding of prima facie obviousness.

For at least the foregoing reasons, claims 22 and 33, as well as claims 23 – 32 and 34 - 41 by their respective dependency, are patentable over Larson and any combination of references relying on Larson.

In addition, one of ordinary skill in the art would not reasonably rely on the teachings of Solow (U.S. Patent 6,588,748) to arrive at Applicants' claimed electronic

die. Solows' dice are novelty items for display purposes only. They are of the same genre as the classic fuzzy dice that hang from car rearview mirrors. They are designed to hang from their wires on display only, and thus, do not include internal batteries. In light of this, Solows' disclosure strongly discourages the use on internal batteries, and instead emphasizes the importance of using an external power source and wires for electronic dice (see, e.g., Solow column 1, line 67 – column 2, line 4). These teachings contrast sharply with Applicants' claimed internal battery(s) recited in independent claims 22 and 33.

Upon reading Solow, one of ordinary skill in the art would be led away from the die of claims 22 and 33. Solows' teachings would not lead one of skill to design a self-contained electronic die. Instead, one of ordinary skill would be directed towards electronic dice that require an external power source and wiring. This is entirely opposite to the die claimed by Applicant. Therefore, Solow not only fails to teach or suggest the claimed invention, but also teaches away from Applicants' invention. Thus, Solow cannot be properly relied upon to support any rejection under Section 103. For at least this reason, claims 22 and 33, as well as claims 23 – 32 and 34 - 41 by their respective dependency, are patentable over Solow and any combination of references including Solow.

Furthermore, claim 22 recites:

“an electronic circuit, located within the cube-shaped shell, for causing, in response to a triggering input, the at least nineteen light-emitting pips on the sides of the cube-shaped shell to light up in a predetermined pattern that has a predetermined duration, the electronic circuit including an integrated circuit (IC) for illuminating one or more light emitting diodes (LEDs) illuminating the at least nineteen light-emitting pips according to the predetermined pattern, the IC being circuit-on-board (COB) mounted to a printed circuit board (PCB)” (Emphasis added).

And claim 33 recites:

“an electronic circuit, located within the shell, for causing, in response to a triggering input, the at least one light source to illuminate in a predetermined pattern that has a predetermined duration, the electronic circuit including an integrated circuit (IC) for illuminating

the at least one light source according to the predetermined pattern, the IC being circuit-on-board (COB) mounted to a printed circuit board (PCB) and configured in a one-shot mode so that the at least one light source illuminates for the predetermined duration upon occurrence of the triggering input” (Emphasis added).

In no instance do the cited references teach or suggest an electronic circuit within the die that includes an “IC being circuit-on-board (COB) mounted to a printed circuit board (PCB)”. The claimed COB-mounted IC is a significant advantage of Applicants’ electronic dice because it allows further miniaturization. For at least this additional reason, claims 22 and 33, as well as claims 23 – 32 and 34 - 41 by their respective dependency, are patentable over the cited references.

Dependent claim 23 recites “a light pipe located at least partially within the shell for transferring light from the LEDs to at least one of the light-emitting pips.” Claim 35 recites similar subject matter. These features are plainly not taught or suggested by the cited references, and thus, claim 23 is patentable over the cited references for at least this additional reason.

Dependent claims 24 and 34 recite “wherein the shell is transparent and the electronic die further comprises an opaque layer of material disposed on the transparent shell in a predetermined pattern defining the light-emitting pips.” These features are plainly not taught or suggested by the cited references, and thus, these claims are patentable over the cited references for at least this additional reason.

Dependent claim 25 recites “wherein the at least one battery is a coin cell battery.” This feature is not taught or suggested by the cited references and provides significant advantage because it allows further miniaturization of the electronic die. Thus, claim 25 is patentable over the cited references for at least these additional reasons.

Dependent claims 32 and 41 recite “an audio generator, operatively coupled to the switch, for playing a voice message announcing a roll outcome indicated by the upward-facing side of the shell.” These features are plainly not taught or suggested by the cited references, and thus, these claims are patentable over the cited references for at least this additional reason.

IX. CONCLUSION

Each of the pending claims in the application is in condition for allowance and early notice to this effect is earnestly solicited. If, for any reason, the Examiner is unable to allow the application and feels that a telephone conference would be helpful to resolve any issues, the Examiner is respectfully requested to contact the undersigned Applicant at 520-760-8268.

Respectfully submitted,

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A handwritten signature in cursive script, appearing to read "Mike Lindsey", is written over a horizontal line.

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